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NEWS 4 AUG 24 ENCOMPLIT/ENCOMPLIT2 reloaded and enhanced  
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NEWS 6 SEP 09 50 Millionth Unique Chemical Substance Recorded in  
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	ENTRY	SESSION
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FILE 'REGISTRY' ENTERED AT 09:49:22 ON 12 OCT 2009

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DICTIONARY FILE UPDATES: 11 OCT 2009 HIGHEST RN 1187821-89-1

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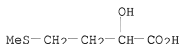
<http://www.cas.org/support/stngen/stndoc/properties.html>

=> s alimet/cn

L1 1 ALIMET/CN

=> d L1 str cn rn

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2009 ACS on STN



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

CN Butanoic acid, 2-hydroxy-4-(methylthio)- (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Butyric acid,  $\alpha$ -hydroxy- $\gamma$ -(methylmercapto)- (4CI)

CN Butyric acid, 2-hydroxy-4-(methylthio)- (6CI, 8CI)

OTHER NAMES:

CN (+)-2-Hydroxy-4-(methylthio)butyric acid

CN  $\alpha$ -Hydroxy- $\gamma$ -(methylmercapto)butyric acid

CN  $\alpha$ -Hydroxy- $\gamma$ -(methylthio)butyric acid

CN  $\alpha$ -Hydroxy-4-(methylthio)butyric acid

CN  $\gamma$ -(Methylmercapto)- $\alpha$ -hydroxybutyric acid

CN  $\gamma$ -(Methylthio)- $\alpha$ -hydroxybutyric acid

CN 2-Hydroxy-4-(methylmercapto)butyric acid

CN 2-Hydroxy-4-(methylthio)butanoic acid

CN 2-Hydroxy-4-(methylthio)butyric acid

CN Alimet

CN AT 88

CN BIOX-A

CN Desmenidol

CN Desmeninol

CN DL- $\alpha$ -Hydroxy- $\gamma$ -methylmercaptobutyric acid

CN DL-2-Hydroxy-4-(methylmercapto)butanoic acid

CN DL-2-Hydroxy-4-(methylmercapto)butyric acid

CN DL-2-Hydroxy-4-(methylthio)butanoic acid

CN DL-2-Hydroxy-4-(methylthio)butyric acid

CN HMTBA

CN Hydan L

CN MHA acid

CN MHA-FA

RN 583-91-5 REGISTRY

=> file caplus medline biosis embase  
COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
7.88	8.54

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 09:49:54 ON 12 OCT 2009  
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=> s alimet  
L2 150 ALIMET

=> s 583-91-5  
L3 908 583-91-5

=> s L2 or L3  
L4 935 L2 OR L3

=> dup rem L4  
PROCESSING COMPLETED FOR L4  
L5 741 DUP REM L4 (194 DUPLICATES REMOVED)

=> s bacteria or bacterial or salmonella  
L6 3654375 BACTERIA OR BACTERIAL OR SALMONELLA

=> s L5 and L6  
L7 42 L5 AND L6

=> s L7 and (AY<2004 or PY<2004 or PRY<2004)  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
'2004' NOT A VALID FIELD CODE  
L8 26 L7 AND (AY<2004 OR PY<2004 OR PRY<2004)

=> d 1-26 ibib abs

L8 ANSWER 1 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2003:620818 CAPLUS

DOCUMENT NUMBER: 139:306973

TITLE: Effects of 2-hydroxy-4-(methylthio) butanoic acid

(HMB) on microbial growth in continuous culture

AUTHOR(S): Noftsgger, S. M.; St-Pierre, N. R.; Karnati, S. K. R.;

Firkins, J. L.

CORPORATE SOURCE: Department of Animal Sciences, Ohio State University,

Columbus, 43210, USA

SOURCE: Journal of Dairy Science (2003), 86(8),

2629-2636

CODEN: JDSCAE; ISSN: 0022-0302

PUBLISHER: American Dairy Science Association  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB 2-Hydroxy-4-(methylthio) butanoic acid (HMB) pos. affects milk composition and yield, potentially through ruminal actions. Four continuous culture fermenters were used to determine the optimal concentration of HMB for digestibility of organic matter (OM), neutral detergent fiber (NDF), acid detergent fiber (ADF), and hemicellulose and synthesis of microbial N. A highly degradable mix of hay and grain was used as a basal diet to simulate a typical lactation diet. Three concns. of HMB (0, 0.055, and 0.110%) and one concentration of dl-Met (0.097%) were infused into the fermenters according to a 4x4 Latin square design. Digesta samples were collected during the last 3 d of each of the four 10-d exptl. periods. Digestibility of OM, hemicellulose, and NDF was largely insensitive to treatment. Digestibility of ADF showed a quadratic effect to supplementation of HMB, with 0.055% having lower digestibility than 0 or 0.110%. Total production of VFA was not influenced by HMB supplementation, but differences in concentration and production of individual VFA were seen. Isobutyrate increased linearly with increasing HMB supplementation. Propionate concentration decreased linearly with increased HMB supplementation, but propionate production showed a quadratic trend ( $P = 0.13$ ). A higher concentration of acetate was detected for dl-Met compared with the highest HMB concentration. There were trends ( $P < 0.15$ ) for dl-Met to decrease the production of isobutyrate and to lower the concentration of butyrate when compared with HMB. Microbial efficiency was not different among treatments. The proportion of bacterial N produced from  $\text{NH}_3\text{-N}$  decreased linearly with increasing HMB, and bacteria receiving dl-Met synthesized more N from  $\text{NH}_3\text{-N}$  than those receiving HMB. These data suggest that supplementation of HMB may have a sparing effect on branched chain volatile fatty acids because the fatty acids are not needed to provide carbon for synthesis of valine, isoleucine and leucine with ammonia. Comparisons of bacterial community structure in the fermenter effluent samples using PCR amplicons containing the ribosomal intergenic spacer region and its flanking partial 16S rRNA gene showed no distinct banding patterns, though treatments tended to group together. Both Met and HMB affect the rumen microbial population, but Met supplied as dl-Met does not act identically to that supplied as HMB.

OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2003:293740 CAPLUS

DOCUMENT NUMBER: 139:67976

TITLE: Potential rapid bioassay for Alimet using a

methionine *Escherichia coli* auxotroph

AUTHOR(S): Froelich, C. A.; Zabala Diaz, I. B.; Ricke, S. C.

CORPORATE SOURCE: Poultry Science Department, Texas A&M University,

College Station, TX, 77843, USA

SOURCE: Journal of Rapid Methods and Automation in

Microbiology (2002), 10(3), 161-172

CODEN: JRMMEJ; ISSN: 1060-3999

PUBLISHER: Food & Nutrition Press, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A potential rapid bioassay for methionine hydroxy analog (MHA) feed additive (Alimet) was examined using a methionine auxotroph *E. coli* strain. Bacterial cells were grown in minimal media containing

a concentration range of 0 to 26.8  $\mu\text{M}$  of either L-methionine or MHA as Alimet. Increasing either methionine or MHA concentration increased the growth rate of the methionine auxotroph. The estimated substrate affinities for methionine compared to MHA were not significantly different ( $P > 0.13$ ) and the maximum growth rate ests. were also similar ( $P > 0.34$ ). Methionine and MHA standard curves yielded linear responses ( $R^2 = 0.96$ ) to increasing concns. of the resp. substrate. Based on these results it appears that the E. coli methionine auxotroph would have potential utility for further development of a rapid bioassay of Alimet.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)  
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2003:119103 CAPLUS

DOCUMENT NUMBER: 138:384416

TITLE: Cooperation between *Lactococcus lactis* and nonstarter  
*Lactobacilli* in the formation of cheese aroma from  
amino acids

AUTHOR(S): Kieronczyk, Agnieszka; Skeie, Siv; Langsrud, Thor;  
Yvon, Mireille

CORPORATE SOURCE: Department of Food Science, Agricultural University of  
Norway, Aas, 1432, Norway

SOURCE: Applied and Environmental Microbiology (2003  
, 69(2), 734-739  
CODEN: AEMIDF; ISSN: 0099-2240

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In order to evaluate the resp. role of starter and nonstarter lactic acid bacteria (LAB) and their interactions in cheese flavor formation, the authors compared the catabolism of phenylalanine, leucine, and methionine by single strains and strain mixts. of *Lactococcus lactis* subsp. *cremoris* NCD0763 and three mesophilic *lactobacilli*. Amino acid catabolism was studied in vitro at pH 5.5, by using radiolabeled amino acids as tracers. In the presence of  $\alpha$ -ketoglutarate, which is essential for amino acid transamination, the *lactobacillus* strains degraded less amino acids than *L. lactis* subsp. *cremoris* NCD0763, and produced mainly nonarom. metabolites. *L. lactis* subsp. *cremoris* NCD0763 produced mainly the carboxylic acids, which are important compds. for cheese aroma. However, in the reaction mixture containing glutamate, only two *lactobacillus* strains degraded amino acids significantly. This was due to their glutamate dehydrogenase (GDH) activity, which produced  $\alpha$ -ketoglutarate from glutamate. The combination of each of the GDH-pos. *lactobacilli* with *L. lactis* subsp. *cremoris* NCD0763 had a beneficial effect on the aroma formation. *Lactobacilli* initiated the conversion of amino acids by transforming them mainly to keto and hydroxy acids, which subsequently were converted to carboxylic acids by the *Lactococcus* strain. Therefore, it can be concluded that such cooperation between starter *L. lactis* and GDH-pos. *lactobacilli* can stimulate flavor development in cheese.

OS.CITING REF COUNT: 50 THERE ARE 50 CAPLUS RECORDS THAT CITE THIS  
RECORD (50 CITINGS)  
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 2001:105230 CAPLUS

DOCUMENT NUMBER: 134:294889

TITLE: Effects of Alimet on nutrient digestibility,  
bacterial protein synthesis, and ruminal

disappearance during continuous culture  
 AUTHOR(S): Vazquez-Anon, M.; Cassidy, T.; McCullough, P.; Varga, G. A.  
 CORPORATE SOURCE: Novus International, Inc., St. Charles, MO, 63304, USA  
 SOURCE: Journal of Dairy Science (2001), 84(1), 159-166  
 CODEN: JDSCAE; ISSN: 0022-0302  
 PUBLISHER: American Dairy Science Association  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A dual effluent continuous culture system was used to investigate the effects of inclusion of Alimet (Novus International, Inc., St. Louis, MO) feed supplement [an 88% aqueous solution of (DL)-2-hydroxy-4-(methylthio)butanoic acid (HMB)] in the diet on nutrient digestibility, bacterial protein synthesis and ruminal disappearance of HMB. Four fermenters were fed 3 times daily a basal diet that consisted of 50% grain mixture and 50% forage for 9 days. In experiment 1, 4 concns. of HMB (0, 0.20, 0.77, and 1.43% DM basis) were added to the diet and fed to the fermenters twice daily. In experiment 2, 2 concns. of dietary HMB (0 and 0.88% DM basis) were fed twice daily and evaluated with 2 solids retention times (16.7 vs. 25.0 h) and 2 liquid dilution rates (0.15 vs. 0.125 h<sup>-1</sup>). Increasing the amount of HMB in the diet did not affect nutrient digestibility, volatile fatty acid concns., or ruminal escape of HMB. Bacterial protein synthesis was improved with the addition of HMB during high and low retention times. The extent of HMB escaping ruminal degradation ranged from 21.6 to 43.2% and was highest at the lower retention time. Thus, a fraction of HMB survives rumen microbial degradation and, therefore, provides a rumen-protected form of methionine at the same time that it improves bacterial protein synthesis.  
 OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (13 CITINGS)  
 REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT  
 L8 ANSWER 5 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2000:421320 CAPLUS  
 DOCUMENT NUMBER: 133:69766  
 TITLE: Method using methionine auxotrophs for cloning genes coding for nitrilase, nitrile hydratase, or amidase  
 INVENTOR(S): Favre-bulle, Olivier; Pierrard, Jerome; Batisse Debitte, Nadine  
 PATENT ASSIGNEE(S): Rhone-Poulenc Animal Nutrition SA, Fr.  
 SOURCE: PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000036120	A1	20000622	WO 1999-FR3089	19991210 <--
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
FR 2787120	A1	20000616	FR 1998-15849	19981211 <--

FR 2787121 A1 20000616 FR 1999-9489 19990719 <--  
 FR 2787121 B1 20030912  
 EP 1137784 A1 20011004 EP 1999-958292 19991210 <--  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 JP 2002532096 T 20021002 JP 2000-588369 19991210 <--  
 AU 773130 B2 20040520 AU 2000-15689 19991210 <--  
 PRIORITY APPLN. INFO.: FR 1998-15849 A 19981211 <--  
 FR 1999-9489 A 19990719 <--  
 WO 1999-FR3089 W 19991210 <--

AB The invention concerns a method for selecting and/or isolating genes coding for enzymes involved in the conversion of an appropriate substrate consisting of methionine and its derivs., such as 2-hydroxy-4-methylthiobutanoic acid, said method comprising the following steps: (1) cloning DNA sequences in a vector enabling their expression in an appropriate host microorganism; (2) transforming a suitable microorganism auxotrophic for methionine with said vectors; (3) growing the transformed microorganisms in a suitable culture medium comprising a sufficient amount of appropriate substrate; and (4) selecting the transformed microorganisms capable of growing in the appropriate culture medium; and (5) isolating and identifying the DNA sequences involved in the biol. conversion of the appropriate substrate. The method was demonstrated using AmetA mutants of Escherichia coli transformed with an expression plasmid for Alcaligenes faecalis nitB. Using culture medium containing 1 µM 2-hydroxy-4-methylthiobutanoic acid and 50 µM 2-hydroxy-4-methylthiobutyronitrile, it was possible to differentiate E. coli transformants expressing the nitrilase gene from those not expressing the gene.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN  
 ACCESSION NUMBER: 1999:732961 CAPLUS  
 DOCUMENT NUMBER: 131:310064  
 TITLE: Nutrient formulation and process for feeding young poultry and other animals  
 INVENTOR(S): Ivey, Francis J.; Dibner, Julia J.; Knight, Christopher D.  
 PATENT ASSIGNEE(S): Novus International, Inc., USA  
 SOURCE: U.S., 20 pp., Cont.-in-part of U.S. Ser. No. 597,815, abandoned.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5985336	A	19991116	US 1996-647719	19960524 <--
US 5928686	A	19990727	US 1995-483297	19950607 <--
CA 2222515	A1	19961219	CA 1996-2222515	19960604 <--
CA 2222515	C	20070925		
WO 9639862	A1	19961219	WO 1996-US9075	19960604 <--
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, FA, GN, ML				

AU 9661539	A	19961230	AU 1996-61539	19960604 <--
AU 723485	B2	20000831		
EP 831718	A1	19980401	EP 1996-919116	19960604 <--
R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE				
CN 1191469	A	19980826	CN 1996-195727	19960604 <--
JP 11506617	T	19990615	JP 1996-501482	19960604 <--
HU 9900850	A2	19990728	HU 1999-850	19960604 <--
HU 9900850	A3	20000328		
ZA 9604883	A	19970107	ZA 1996-4883	19960607 <--
US 5976580	A	19991102	US 1996-760881	19961206 <--
NO 9705691	A	19971205	NO 1997-5691	19971205 <--
US 6329001	B1	20011211	US 1999-333249	19990615 <--
US 6210718	B1	20010403	US 1999-334968	19990617 <--
US 20040052895	A1	20040318	US 2001-792998	20010226 <--
US 6733759	B2	20040511		

PRIORITY APPLN. INFO.:

US 1995-483297	A2	19950607 <--
US 1996-597815	B2	19960207 <--
US 1995-493297	A	19950607 <--
US 1996-647719	A	19960524 <--
WO 1996-US9075	W	19960604 <--
US 1996-760881	A3	19961206 <--
US 1999-334968	A3	19990617 <--

AB A nutrient formulation including moisture which is designed for use in poultry and other animals, and a method of feeding it which improves subsequent survival, cumulative feed efficiency and weight gain is disclosed. The method comprises making available for consumption ad libitum a high moisture material containing at least about 20% by weight water to the poultry

or

other animals before they are offered dry food ad libitum.

OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1998:394170 CAPLUS

DOCUMENT NUMBER: 129:53785

ORIGINAL REFERENCE NO.: 129:11215a,11218a

TITLE: High moisture nutrient formulation for poultry

INVENTOR(S): Ivey, Francis J.; Dibner, Julia A.; Knight, Christopher D.

PATENT ASSIGNEE(S): Novus International, Inc., USA

SOURCE: PCT Int. Appl., 81 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 4

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
WO 9824327	A1	19980611	WO 1997-US20855	19971110 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5976580	A	19991102	US 1996-760881	19961206 <--
CA 2274084	A1	19980611	CA 1997-2274084	19971110 <--

AU 9852585 A 19980629 AU 1998-52585 19971110 <--  
 AU 729057 B2 20010125  
 EP 944333 A1 19990929 EP 1997-947528 19971110 <--  
 R: BE, DE, DK, ES, FR, GB, IT, LU, NL, MC, PT, IE  
 BR 9713996 A 20000229 BR 1997-13996 19971110 <--  
 MX 9905029 A 20000228 MX 1999-5029 19990531 <--  
 PRIORITY APPLN. INFO.: US 1996-760881 A 19961206 <--  
 US 1995-483297 A2 19950607 <--  
 US 1996-597815 B2 19960207 <--  
 US 1996-647719 A2 19960524 <--  
 WO 1997-US20855 W 19971110 <--

AB A nutrient formulation including moisture, a coloring agent, a palatability modifier, and/or an adjuvant which is designed for use in poultry and other animals, and a method of feeding it which improves subsequent livability, cumulative feed efficiency, weight gain, and resistance to disease challenge or other stresses is disclosed.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1996:58045 CAPLUS

DOCUMENT NUMBER: 124:230799

ORIGINAL REFERENCE NO.: 124:42773a,42776a

TITLE: Effect of methionine and its related compounds in rumen bacterial activity

AUTHOR(S): Hegedus, M.; Fekette, S.; Veresegyhazy, T.; Andrasofszky, E.; Brydl, E.

CORPORATE SOURCE: Dep. Anim. Nutr., Univ. Vet. Sci., Budapest, H-1400, Hung.

SOURCE: Archives of Animal Nutrition (1995), 47(3), 287-94

CODEN: AANUET

PUBLISHER: Harwood

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect of the methionine (I) sources L-I, DL-I (II), DL-S-methyl-I-sulfonium chloride (III), N-hydroxymethyl-DL-I-Ca (IV), I-hydroxy-analog free acid (V), and I-sulfoxide (VI) on rumen bacterial growth was studied by a I free assay medium (Bacto Methionine Assay Media, Difco) supplemented with increasing quantities of the I sources and inoculated with 1 drop of diluted rumen bacteria. The optical d. was measured after 18 h incubation on 39°. I and II promoted the highest growth response, while III and IV exerted lower optical densities. V and VI did not show any growth response.

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L8 ANSWER 9 OF 26 CAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1994:76187 CAPLUS

DOCUMENT NUMBER: 120:76187

ORIGINAL REFERENCE NO.: 120:13695a,13698a

TITLE: Biological activity of methionine derivatives. I. Microbiological activity of methionine derivatives

AUTHOR(S): Hegedus, Mihaly; Andrasofszky, Emese; Brydl, Endre; Veresegyhazy, Tamas; Tamas, Jozsef

CORPORATE SOURCE: Takarmanyozastani Tansz., Allatorvos-Tudomanyi Egy., Budapest, H-1077, Hung.

SOURCE: Magyar Allatorvosok Lapja (1993), 48(9), 527-31

CODEN: MGALA5; ISSN: 0025-004X

DOCUMENT TYPE: Journal  
LANGUAGE: Hungarian

AB Microbiol. utility of different methionine derivatives was studied using Lactobacillus strains. L. plantarum and L. mesenteroides utilized methionine equally, however S-methyl-methionine proved to be active only for L. plantarum. DL-methionine-hydroxy-analog (HMB) was not utilized by any of the bacterial strains. The L and D stereoisomers did not differ significantly in relation to growth of L. plantarum. Methionine-sulfoxide reached only 70% of methionine effectiveness on growth, while the methionine-sulfone proved to be inactive. A substitution of cysteine for methionine was not adequate to cover the methionine requirement of L. plantarum. S-methyl-MET was utilized in a lesser manner as a methionine source, however its effect was increased in the presence of homocysteine.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L8 ANSWER 10 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1992:254075 CAPLUS

DOCUMENT NUMBER: 116:254075

ORIGINAL REFERENCE NO.: 116:43075a,43078a

TITLE: Fermentative manufacture of  $\alpha$ -hydroxy-4-methylthiobutyric acid

INVENTOR(S): Endo, Ryuichi; Tamura, Koji; Yamagami, Tomohide; Kobayashi, Etsuko

PATENT ASSIGNEE(S): Nitto Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 04040898	A	19920212	JP 1990-148723	19900608 <--
PRIORITY APPLN. INFO.:			JP 1990-148723	19900608 <--

AB  $\alpha$ -Hydroxy-4-methylthiobutyric acid (I), useful as a feed additive, is manufactured by fermentative hydrolysis of  $\alpha$ -hydroxy-4-methylthiobutyronitrile (II). Caseobacter sp. BC23 (FERM P-11261) was aerobically cultured in an agar medium containing glycerol, yeast extract, 0.02% benzonitrile, and salts at 30° and pH 7.5 for 48 h. The bacteria were collected by centrifugation and washed, then treated with a phosphate buffer (pH 7.5) containing 100 mM II at 25° for 20 h to manufacture 51 mM I. The bacteria were also characterized.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L8 ANSWER 11 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1989:572878 CAPLUS

DOCUMENT NUMBER: 111:172878

ORIGINAL REFERENCE NO.: 111:28785a,28788a

TITLE: Comparison of the biological efficacy of DL-methionine and DL-2-hydroxy-4-methylthiobutyric acid in rats

AUTHOR(S): Heger, Jaroslav; Frydrych, Zdenek; Lindner, Petr; Hauptman, Ivo

CORPORATE SOURCE: Vyzk. Ustav Biofaktory Vet. Leciva, Pohori-Chotoun, Czech.

SOURCE: Biologizace a Chemizace Zivocisne Vyroby - Veterinaria (1987), 23(4), 373-83

CODEN: BCZVDE; ISSN: 0139-8571

DOCUMENT TYPE: Journal  
LANGUAGE: Czech

AB N balance expts. on growing male SPF rats were carried out to study the biol. efficacy of DL-methionine-Na (DLM-Na) and DL-2-hydroxy-4-methylthiobutyric acid (HMB) in comparison with DL-methionine (DLM) on an equimolar basis. N balance (NB) and the biol. value of protein (BV) of a diet containing the bacterial protein Pruteen increased significantly after supplementation with DLM or DLM-Na. No significant differences were found in the bioefficacy of these 2 sources of methionine activity. Graded supplements of DLM and HMB to a yeast-based diet resulted in an increase of NB and BV, but the differences between the methionine sources at the same treatment level were not significant. No significant difference was found between the slopes of regression lines fitted to the linear part of the dose-response relationship. A stepwise substitution of 25, 50, and 75% HMB for DLM was accompanied by only a slight decrease in NB and BV. However, if all the dietary methionine was replaced by HMB, a significant decrease in protein utilization was observed. A similar substitution of HMB for DLM in a diet containing methionine activity corresponding to approx.20% of the recommended allowance was also accompanied by a decrease in protein utilization, but the break-point of the dose-response relationship was not identified.

L8 ANSWER 12 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1989:151051 CAPLUS

DOCUMENT NUMBER: 110:151051

ORIGINAL REFERENCE NO.: 110:24897a,24900a

TITLE: Metabolism of DL-methionine and methionine analogs by rumen microorganisms

AUTHOR(S): Patterson, J. A.; Kung, L., Jr.

CORPORATE SOURCE: Dep. Anim. Sci., Purdue Univ., West Lafayette, IN, 47907, USA

SOURCE: Journal of Dairy Science (1988), 71(12), 3292-301

CODEN: JDSCAE; ISSN: 0022-0302

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Rates of degradation of DL-methionine and a number of methionine derivs. by rumen

microorganisms were studied in vitro. Methionine hydroxy analog (I), the ammonium salt, and the amide derivative of methionine hydroxy analog were degraded more slowly than was methionine. Me and Et esters of I were rapidly converted to I, which was then degraded. While rumen contents were separated into protozoal and bacterial fractions, and rates of disappearance of [14C]carboxyl-labeled methionine and I were determined Disappearance of the label tended to be slower in the bacterial fraction; however, incorporation into cellular material tended to be higher for the bacterial than for the protozoal fraction. Disappearance of labeled I was slower than labeled methionine in all fractions. Addition of unlabeled methionine inhibited disappearance of labeled I, but unlabeled I did not affect disappearance of labeled methionine. The effect of either Na2S2O4, methionine, or I on neutral detergent fiber digestion was related to the amount of sulfur in the medium and not source of sulfur.

OS.CITING REF COUNT: 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (19 CITINGS)

L8 ANSWER 13 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1988:627256 CAPLUS

DOCUMENT NUMBER: 109:227256

ORIGINAL REFERENCE NO.: 109:37549a,37552a

TITLE: Absorption of 14C-2-hydroxy-4-(methylthio)butanoic acid (Alimet) from the hindgut of the

broiler chick  
AUTHOR(S): Dibner, J. J.; Knight, C. D.; Swick, R. A.; Ivey, F. J.  
CORPORATE SOURCE: Anim. Sci. Div., Monsanto Co., St. Louis, MO, 63198, USA  
SOURCE: Poultry Science (1988), 67(9), 1314-21  
CODEN: POSCAL; ISSN: 0032-5791  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The role of the hindgut of the broiler chick in the absorption of 2-hydroxy-4-(methylthio)butanoic acid (HMB) was studied. When 14C-HMB was delivered directly into the hindgut, the rate of absorption from this gastrointestinal site was .apprx.40% of the administered dose per h. Plasma radiolabel appearance indicated that the 14C-HMB lost from the hindgut was being absorbed into the bloodstream of the bird. Decarboxylation expts. using cecal microorganisms showed that the loss of 14C-HMB could not be accounted for by bacterial metabolism. When birds were dosed with radiolabeled HMB and tissue samples were tested, results showed that the 14C-HMB that was absorbed from the hindgut was incorporated into protein in a dose-related manner. In addition, an equimolar, equal specific activity i.p. dose of HMB did not alter the rate of HMB absorption from the hindgut. This indicates that HMB absorption from the gut is not limited by HMB already in the body tissues. This result confirmed that the rate of HMB diffusion into the blood and its conversion to methionine in body tissues were sufficient to maintain the concentration gradient required for the continued absorption of HMB. Finally, whole body autoradiog. comparing 35S-HMB and 35S-DL-methionine showed no substantial differences in terms of label d. or distribution. These studies demonstrate that 14C-HMB disappears from the lumen of the large intestine and ceca when it is administered directly into the hindgut. This research confirms that HMB is absorbed throughout the entire gastrointestinal system.

OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

L8 ANSWER 14 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1987:29850 CAPLUS  
DOCUMENT NUMBER: 106:29850  
ORIGINAL REFERENCE NO.: 106:4963a,4966a  
TITLE: Ethylene formation by cell-free extracts of Escherichia coli  
AUTHOR(S): Ince, J. E.; Knowles, C. J.  
CORPORATE SOURCE: Biol. Lab., Univ. Kent, Kent, CT2 7NJ, UK  
SOURCE: Archives of Microbiology (1986), 146(2), 151-8  
CODEN: AMICCW; ISSN: 0302-8933  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The pathway leading to the formation of ethylene as a secondary metabolite from methionine by E. coli strain B SPAO was investigated. Methionine was converted to 2-oxo-4-methylthiobutyric acid (KMBA) by a soluble transaminase enzyme. 2-Hydroxy-4-methylthiobutyric acid (HMBA) was also a product, but is probably not an intermediate in the ethylene-forming pathway. KMBA was converted to ethylene, methanethiol, and probably CO2 by a soluble enzyme system requiring the presence of NAD(P)H, Fe3+ chelated to EDTA, and O2. In the absence of added NAD(P)H, ethylene formation by cell-free exts. from KMBA was stimulated by glucose. The transaminase enzyme may allow the amino group to be salvaged from methionine as a source of N for growth. As in the plant system, ethylene produced by E. coli was derived from the C-3 and C-4 atoms of methionine, but the pathway of formation was different. It is possible that ethylene production by bacteria might generally occur via the route seen in E. coli.

OS.CITING REF COUNT: 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

L8 ANSWER 15 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1986:405554 CAPLUS

DOCUMENT NUMBER: 105:5554

ORIGINAL REFERENCE NO.: 105:1063a,1066a

TITLE: Effect of supplementing methionine in various forms on bacterial degradation of methionine in continuous culture

AUTHOR(S): Blake, W. L.; Stern, M. D.; Hannah, S. M.

CORPORATE SOURCE: Dep. Anim. Sci., Univ. Minnesota, St. Paul, MN, 55108, USA

SOURCE: Nutrition Reports International (1986), 33(5), 729-38

CODEN: NURIBL; ISSN: 0029-6635

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A dual flow continuous culture system was used to determine the effect of supplementing DL-methionine [59-51-8], methionine hydroxy analog [583-91-5] protected L-methionine [63-68-3], Mepron [101380-12-5], and DL-methionyl-DL-methionine [52715-93-2] on degradation in strained rumen fluid contents. A diet (16.5% crude protein on a dry matter basis) consisting of alfalfa hay, corn silage, and grain (20-20-60% on a dry matter (DM) basis) provided the substrate for microbial metabolism at the rate of 75 g DM/day. Methionine supplements were added directly to fermenters twice daily and supplied an equivalent of 98 mg/day of DL-methionine and 21 mg/day of S. An unsupplemented diet served as the control. Organic matter, fiber, and total nonstructural carbohydrate digestibilities were not affected by methionine supplementation. Total and individual volatile fatty acid concns. were generally similar for methionine-supplemented diets compared to the control. There was a trend for increased bacterial synthesis with diets supplemented with methionine and its derivs. compared to the control diet. Effluent flow of methionine was higher for the diet supplemented with DL-methionyl-DL-methionine than for the control diet.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L8 ANSWER 16 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1978:103558 CAPLUS

DOCUMENT NUMBER: 88:103558

ORIGINAL REFERENCE NO.: 88:16233a,16236a

TITLE: Microbial conversion of methionine to methionine hydroxy analog and its natural occurrence in various foods and feed products

AUTHOR(S): Belasco, Irvin J.; Pease, Harlan L.; Reiser, Robert W.  
CORPORATE SOURCE: Biochem. Dep., E. I. du Pont de Nemours and Co., Inc., Wilmington, DE, USA

SOURCE: Journal of Agricultural and Food Chemistry (1978), 26(2), 327-30

CODEN: JAFCAU; ISSN: 0021-8561

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Anal. of food and feed products that include a fermentative process step, such as various cultured milk products, bread, sauerkraut, beer, distillers' mixed grains, and corn silage, revealed the presence of methionine hydroxy analog (M-analog) [583-91-5] as a naturally occurring ingredient at concs. of up to 60 ppm. The microbial conversion of labeled methionine to M-analog was further evaluated with strains of Saccharomyces cerevisiae, Lactobacillus lactis, L. bulgaricus, and Bacillus subtilis as inocula in milk. All were capable of this

conversion, with *S. cerevisiae* being the most efficient.

L8 ANSWER 17 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1975:29638 CAPLUS  
DOCUMENT NUMBER: 82:29638  
ORIGINAL REFERENCE NO.: 82:4737a,4740a  
TITLE: Production of L-amino acids from 2-hydroxy acids. I.  
Isolation and the taxonomic studies of a strain of  
bacteria producing L-methionine from its  
hydroxy analog  
AUTHOR(S): Wada, Hiroo  
CORPORATE SOURCE: Sumitomo Chem. Co., Ltd., Osaka, Japan  
SOURCE: Nippon Nogeikagaku Kaishi (1974), 48(5),  
297-302  
CODEN: NNKKA; ISSN: 0002-1407  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese  
AB Screening tests were carried out to obtain microorganisms capable of  
converting DL-2-hydroxy-4-methylthiobutyric acid (DL-HMBA) to  
L-methionine. A wide range of microorganisms, especially bacteria,  
were useful for the conversion. Among these, *Pseudomonas denitrificans*  
G-132-13 converted 70.4% of DL-HMBA to L-methionine. Other amino acids  
were also produced by this strain from the corresponding 2-hydroxy acids.

L8 ANSWER 18 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1974:25927 CAPLUS  
DOCUMENT NUMBER: 80:25927  
ORIGINAL REFERENCE NO.: 80:4283a,4286a  
TITLE: L-Lysine by fermentation  
INVENTOR(S): Nakayama, Kiyoshi  
PATENT ASSIGNEE(S): Kyowa Fermentation Industry Co., Ltd.  
SOURCE: Jpn. Tokkyo Koho, 3 pp.  
CODEN: JAXXAD  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 48010235	B	19730402	JP 1968-58521	19680819 <--
PRIORITY APPLN. INFO.:			JP 1968-58521	19680819 <--
AB	Lysine production was significantly increased by cultivation of Brevibacterium, Corynebacterium, Arthrobacter, etc., on a medium containing at least 1 of the following: ethionine, norleucine, $\alpha$ -methylmethionine, 2-hydroxy-4-(methylthio)butyric acid, N-acetylnorleucine, N-acetylmethionine, homocysteine, cystine, or cysteine. The optimum concs. of these compds. were 50-20,000 $\mu$ g/ml. For example, 24 and 21 mg/ml of lysine were obtained by cultivation of <i>C. glutamicus</i> on a medium containing DL-ethionine 200 and 1000 $\mu$ g/ml, resp., vs. the control concentration of 11 mg/ml.			

L8 ANSWER 19 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 1973:475714 CAPLUS  
DOCUMENT NUMBER: 79:75714  
ORIGINAL REFERENCE NO.: 79:12261a,12264a  
TITLE: Effect of methionine hydroxy analog on  
bacterial protein synthesis from urea and  
glucose, starch, or cellulose by rumen microbes, in  
vitro  
AUTHOR(S): Gil, L. A.; Shirley, R. L.; Moore, J. E.

CORPORATE SOURCE: Anim. Sci. Dep., Univ. Florida, Gainesville, FL, USA  
 SOURCE: Journal of Animal Science (Savoy, IL, United States) (1973), 37(1), 159-63  
 CODEN: JANSAG; ISSN: 0021-8812

DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Addition of methionine hydroxy analog (MHA) or DL-methionine to media containing glucose or cellulose as the substrate and urea as the N source accelerated bacterial N incorporation, NH<sub>3</sub> metabolism, and cellulose digestion rate. Inorg. sulfate was as effective as MHA or methionine only when fermentation was prolonged beyond 18 hr with starch and 24 hr with cellulose. At 18 hr of fermentation, MHA supported more starch digestion than methionine or sulfate.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L8 ANSWER 20 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1973:109636 CAPLUS  
 DOCUMENT NUMBER: 78:109636  
 ORIGINAL REFERENCE NO.: 78:17615a,17618a  
 TITLE: Effect of MHA (methionine hydroxy analog) on protein synthesis of mixed rumen bacteria  
 Gil P., Luis Arturo  
 AUTHOR(S): Univ. Florida, Gainesville, FL, USA  
 CORPORATE SOURCE: (1972) 155 pp. Avail.: Univ. Microfilms,  
 SOURCE: Ann Arbor, Mich., Order No. 73-561  
 From: Diss. Abstr. Int. B 1972, 33(7), 2868  
 DOCUMENT TYPE: Dissertation  
 LANGUAGE: English  
 AB Unavailable

L8 ANSWER 21 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1973:70510 CAPLUS  
 DOCUMENT NUMBER: 78:70510  
 ORIGINAL REFERENCE NO.: 78:11215a,11218a  
 TITLE: Sulfur source for in vitro cellulose digestion and in vivo ration utilization, nitrogen metabolism, and sulfur balance  
 Bull, L. S.; Vandersall, J. H.  
 AUTHOR(S): Dairy Sci. Dep., Univ. Maryland, College Park, MD, USA  
 CORPORATE SOURCE: Journal of Dairy Science (1973), 56(1),  
 SOURCE: 106-12  
 CODEN: JDSCAE; ISSN: 0022-0302  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The response in vitro of rumen bacteria to different sources and percents of S was measured by the extent or rate of cellulose digestion. Sources of sulfur, viz., Na<sub>2</sub>SO<sub>4</sub>, CaSO<sub>4</sub>, DL-methionine, and methionine hydroxy analog, were equal at equal S in their ability to promote cellulose digestion at 24 hr. The optimum was 0.16-0.24% S. Na<sub>2</sub>SO<sub>4</sub> showed a slightly greater time-rate response than methionine analog for 48 hr. Growing dairy steers were used to determine the in vivo effect of Na<sub>2</sub>SO<sub>4</sub>, DL-methionine, or methionine hydroxy analog on digestibility, N utilization, and S balance. Methionine analog resulted in greater dry matter and acid detergent fiber digestibility. True S absorption was not influenced by its source, although methionine analog resulted in more absorbed S being excreted in urine and less retained. The regression of Y = S balance (mg/day/kg<sup>0.75</sup>) on X = S intake (mg/day/kg<sup>0.75</sup>) yields: Y = 0.84X - 79.9, correlation coefficient 0.94, with 95 mg at Y = 0 for growing steers. Supplemental S was more available than that in the natural diet.

Methionine analog resulted in greater absorption of N and Na<sub>2</sub>SO<sub>4</sub> gave lower urine-N excretion. All sources of S increased N balance with Na<sub>2</sub>SO<sub>4</sub> superior to methionine hydroxy analog and to DL-methionine.

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD  
(5 CITINGS)

L8 ANSWER 22 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1959:78348 CAPLUS

DOCUMENT NUMBER: 53:78348

ORIGINAL REFERENCE NO.: 53:14233a-c

TITLE: Further observations on biochemical mutants of *Pseudomonas tabaci*

AUTHOR(S): Garber, E. D.

CORPORATE SOURCE: Univ. of Chicago

SOURCE: Botanical Gazette (Chicago) (1959), 120,  
157-61

CODEN: BOGAA5; ISSN: 0006-8071

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB Mutants of *P. tabaci* requiring methionine (I) for growth were tested for their ability to grow on a large number of compds., some known or assumed to be involved in the biosynthesis of I. Compds. that supported growth were DL-methionine, DL-homocysteine (II), DL-homocysteine thiolactone-HCl, acetyl-DL-methionine, S-adenosyl methionine, Me methionine sulfonium chloride,  $\alpha$ -hydroxy-methyl mercaptobutyric acid, dimethyl bromopropiothetin, and dimethyl propiothetin chloride, and 2 antimetabolites of I, methionine sulfoximine, and methionine sulfoxide. A number of other compds. failed to support growth, including DL-cysteine, DL-homoserine, and DL-cystathionine, and the antimetabolite, methionine sulfone. Except for 1 mutant, growth in II was very poor. The biosynthesis of I in this species may differ from that in other species of bacteria and fungi. The pattern of virulence and avirulence for biochem. mutants, especially those requiring I or tryptophan, toward *Nicotiana tabacum* is discussed.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L8 ANSWER 23 OF 26 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1950:15432 CAPLUS

DOCUMENT NUMBER: 44:15432

ORIGINAL REFERENCE NO.: 44:3088h-i,3089a-b

TITLE: Decomposition of thioether derivatives by bacteria. I. Methanethiol formation and the properties of the responsible enzyme

AUTHOR(S): Mitsuhashi, Susumu

CORPORATE SOURCE: Inst. Infectious Diseases, Tokyo

SOURCE: Japanese Journal of Experimental Medicine (1949), 20, 211-22

CODEN: JJEMAG; ISSN: 0021-5031

DOCUMENT TYPE: Journal

LANGUAGE: English

AB When a species of bacteria such as *Escherichia coli*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Clostridium tetani*, or *Cl. perfringens* is incubated in a basal medium, no H<sub>2</sub>S gas or methanethiol is produced. Addition of 0.1% methionine or 0.05% homocysteine yields H<sub>2</sub>S but no mercaptan. After incubation 0.1% cystine produced mercaptan but no H<sub>2</sub> S. A strain was isolated from soil which produced methanethiol within 30 min. after addition to a medium containing L-methionine. It was a short, gram-neg., motile, anaerobic rod. The amount of mercaptan produced was greatest at pH 7.6, and 37°, in a reaction time of 3 hrs. The bacterial enzyme had the greatest activity when anaerobic culture was used at pH 4-5, at

35° for 24 hrs. It was separated and purified by treating the bacterial suspension with ultrasonic waves (540 kilocycles) for 30 min., centrifuging and dialyzing the supernatant fluid. Incubating the enzyme solution with L-methionine at 37° for 3 hrs. decomposed 42% of the compound. The enzyme also decomposed S-methylcysteine, α-oxy-γ-methiobutyric acid, γ-methiobutyric acid but not methionol. This enzyme was quite different from cystinedesulfurase.

L8 ANSWER 24 OF 26 MEDLINE on STN  
ACCESSION NUMBER: 2003340571 MEDLINE  
DOCUMENT NUMBER: PubMed ID: 12872972  
TITLE: Absorption of methionine and 2-hydroxy-4-methylthiobutoanic acid in conventional and germ-free chickens.  
AUTHOR: Drew M D; Van Kessel A G; Maenz D D  
CORPORATE SOURCE: Department of Animal and Poultry Science, University of Saskatchewan, 51 Campus Drive, Saskatoon SK Canada S7N 5A8.. drew@sask.usask.ca  
SOURCE: Poultry science, (2003 Jul) Vol. 82, No. 7, pp. 1149-53.  
Journal code: 0401150. ISSN: 0032-5791.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
(RESEARCH SUPPORT, NON-U.S. GOV'T)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200308  
ENTRY DATE: Entered STN: 23 Jul 2003  
Last Updated on STN: 27 Aug 2003  
Entered Medline: 26 Aug 2003

AB The apparent absorption of 3H-labeled L-Met and L-2-hydroxy-4-methylthiobutoanic acid (MHA-FA) was compared in germ-free and conventional broiler chickens to determine the effect of intestinal bacteria on the absorption of Met and MHA-FA. The two diets contained 0.236% of added Met or MHA-FA. Nineteen germ-free birds were maintained in two isolators and fed diets that had been sterilized by gamma irradiation (50 kilogreys). Nineteen conventional birds were reared in batteries and received nonirradiated feed. Diets were fed ad libitum for 3 wk. On d 21 of the experiment, the birds fasted overnight and were refed the experimental diets to which 1.11 x 10(7) Bq of 1-[methyl3H]MHA-FA or 1-[methyl3H]Met/kg of feed had been added. 51CrCl3 (1.11 x 10(7) Bq/kg of feed) was added as an indigestible marker. After 3 h the birds were euthanized, and their intestinal tracts were removed and partitioned into six sections. Residual Met and MHA-FA in digesta were calculated as the ratio of 3H:51Cr in each sample divided by the ratio of 3H:51Cr in the feed. The residual MHA-FA in the distal ileum of germ-free broilers was lower than in conventional birds (4.7 and 10.2% respectively; P < 0.05). In contrast the residual Met in the distal ileum of germ-free broilers was not different than in conventional birds (3.0 and 3.7% respectively; P > 0.05). This study demonstrates that intestinal bacteria significantly reduce the apparent absorption of MHA-FA from the intestinal tract of broiler chickens.

L8 ANSWER 25 OF 26 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN  
ACCESSION NUMBER: 2004:224157 BIOSIS  
DOCUMENT NUMBER: PREV200400223971  
TITLE: Effects of feeding calcium salts of fatty acids with methionine hydroxy analog and bacterial fermentation residue vs. tallow-vegetable blend and plant proteins on lactational performance and in-vitro fermentation.  
AUTHOR(S): Koudele, K. A. [Reprint Author]; Sanchez, W. K.; Adams, L.

H. [Reprint Author]; Weber, D. E.; Metzger, D. R.;  
 St.-Pierre, N. R.; Block, E.  
 CORPORATE SOURCE: Andrews University, Berrien Springs, MI, USA  
 SOURCE: Journal of Dairy Science, (2003) Vol. 86, No.  
 Supplement 1, pp. 271. print.  
 Meeting Info.: Joint Annual Meeting of the American Dairy  
 Science Association, the American Society of Animal Science  
 and the Mexican Association of Animal Production. Phoenix,  
 Arizona, USA. June 22-26, 2003. American Dairy Science  
 Association; American Society of Animal Science.  
 CODEN: JDSCAE. ISSN: 0022-0302.  
 DOCUMENT TYPE: Conference; (Meeting)  
 Conference; Abstract; (Meeting Abstract)  
 LANGUAGE: English  
 ENTRY DATE: Entered STN: 21 Apr 2004  
 Last Updated on STN: 21 Apr 2004

L8 ANSWER 26 OF 26 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on  
 STN  
 ACCESSION NUMBER: 1987:221470 BIOSIS  
 DOCUMENT NUMBER: PREV198732107344; BR32:107344  
 TITLE: CONVERSION OF 2 HYDROXY-4-METHYLTHIOBUTANOIC ACID  
 ALIMET TO METHIONINE IN ESCHERICHIA-COLI.  
 AUTHOR(S): WORKMAN W E [Reprint author]; BOGOSIAN G; KANE J F  
 CORPORATE SOURCE: ANIM SCI DIV, MONSANTO, ST LOUIS, MO 63198, USA  
 SOURCE: Abstracts of the Annual Meeting of the American Society for  
 Microbiology, (1987) Vol. 87, pp. 230.  
 Meeting Info.: 87TH ANNUAL MEETING OF THE AMERICAN SOCIETY  
 FOR MICROBIOLOGY, ATLANTA, GEORGIA, USA, MARCH 1-6, 1987.  
 ABSTR ANNU MEET AM SOC MICROBIOL.  
 CODEN: ASMACK. ISSN: 0094-8519.  
 DOCUMENT TYPE: Conference; (Meeting)  
 FILE SEGMENT: BR  
 LANGUAGE: ENGLISH  
 ENTRY DATE: Entered STN: 9 May 1987  
 Last Updated on STN: 9 May 1987

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